

WHAT IS CLAIMED IS:

1 1. A storage system, comprising:
2 a host configured to receive a data file from a client, the host including a data
3 management rule set program that is operable to associate a management rule to the data file
4 received from the client;
5 a first storage subsystem configured to receive and store the data file from the
6 host, the storage system including a storage controller and a plurality of storage volumes; and
7 a data protection server including a data protection management program that
8 cooperates with the first storage subsystem to protect the data file stored in the first storage
9 subsystem.

1 2. The storage system of claim 1, wherein the management rule is
2 inserted into a header of the data file.

1 3. The storage system of claim 2, wherein the management rule relates to
2 a retention period of the data file.

1 4. The storage system of claim 1, wherein the first storage subsystem
2 further comprises a data protection program that cooperates with the data protection
3 management program of the data protection server to protect the data file stored in the first
4 storage subsystem, wherein the management rule is attached to the data file and transmitted
5 to the first storage subsystem with a data content of the data file.

1 5. The storage system of claim 1, where the data file is stored in a first
2 storage volume of the first storage subsystem, the storage system further comprising:
3 a data relocation server configured to manage relocation of the data file to a
4 second storage volume from the first storage volume, the data relocation server including a
5 data relocation management program and a storage information table including information
6 about storage subsystems and storage media associated with the storage system, wherein the
7 data relocation management program initiates the relocation of the data file to the second
8 storage volume by looking up the storage information table for a suitable storage location for
9 the second storage volume.

1 6. The storage system of claim 5, wherein the second storage volume is
2 located in a second storage subsystem of the storage system.

1 7. The storage system of claim 1, wherein the data relocation server and
2 the host are different devices.

1 8. The storage system of claim 1, wherein the data protection server and
2 the host are different devices.

1 9. The storage system of claim 1, wherein the data management rule set
2 program of the host inserts a plurality of management rules into a header of the data file, the
3 management rules relating to information about a retention period and relocation instructions
4 of the data file.

1 10. A management server provided in a storage system, the storage system
2 including one or more hosts and one or more storage subsystems, the management server
3 comprising:

4 a memory to store data;

5 a processor to process data;

6 a network interface to link with one or more computers of the storage system;

7 a first management program to attach a management rule to a data file to be
8 stored in a storage subsystem of the storage system, the management rule relating to a
9 retention period or relocation information of the data file,

10 wherein the data file and the management rule are stored in a storage volume
11 of the storage subsystem.

1 11. The server of claim 10, wherein the server is a host that is configured
2 to receive data files from a client of the storage system and send read and write requests to
3 the storage subsystem.

1 12. The server of claim 10, wherein the management rule is inserted into a
2 header of the data file, the server further comprising:

3 a second management program that cooperates with a file system to store the
4 data file in the storage subsystem.

1 13. A management server provided in a storage system, the storage system
2 including one or more hosts and one or more storage subsystems, the management server
3 comprising:

4 a memory to store data;

5 a processor to process data;
6 a network interface to link with one or more computers of the storage system;
7 a first management program operable to access a header of a data file and
8 manage the data file according to a management rule inserted in the header, the management
9 rule relating to a retention period or relocation instructions of the data file.

1 14. The server of claim 13, wherein the server is a data protection server
2 and the first management program is a data protection management program.

1 15. The server of claim 13, wherein the server is a data relocation server
2 and the first management program is a data relocation management program.

1 16. A method for managing a data file stored in a storage system, the
2 storage system including one or more client, one or more hosts, one or more storage
3 subsystems, the method comprising:
4 receiving a data file including a header and a data content;
5 attaching a management rule to the data file;
6 storing the data file and the management rule at a first storage location in a
7 first storage subsystem, the management rule relating to retention or relocation information of
8 the data file; and
9 notifying a management program about the data file.

1 17. The method of claim 16, further comprising:
2 accessing the management rule attached to the data file; and
3 performing a management act relating to the data file according to the
4 management rule,
5 wherein the management rule is inserted into a header of the data file.

1 18. The method of claim 17, wherein the management rule is accessed by a
2 data protection management program provided in a data protection server, the management
3 act being an act related to preventing the data file stored in the first storage location from
4 being modified or deleted.

1 19. The method of claim 17, wherein the management rule is accessed by a
2 data relocation server, and the management act relates to relocating the data file to a second
3 storage location.

1 20. The method of claim 1, wherein the management rule is inserted into a
2 header of the data file by a host.